Speaker: Kaveh Mousavand.

Title:
A Categorification of Biclosed Sets of Strings

Abstract:
In joint work with A. Garver and T. McConville, for any gentle algebra of finite representation type we studied a closure operator on the set of strings. Shortly before, Palu, Pilaud, and Plamondon had proved that the collection of all biclosed sets of strings forms a lattice, and moreover, that this lattice is congruence-uniform. Many interesting examples of finite congruence-uniform lattices may be represented as the lattice of torsion classes of an associative algebra. To extend this result, we introduced a generalization-- the lattice of torsion shadows-- and proved that the lattice of biclosed sets of strings is isomorphic to a lattice of torsion shadows.

Furthermore, we introduced the analogous notion of wide shadows to extend wide subcategories, so we could find a new realization for another important lattice theoretical phenomenon. In fact, we showed the shard intersection order of the lattice of biclosed sets is isomorphic to a lattice of wide shadows. Consequently, in our setting, we established a bijection between torsion shadows and wide shadows, analogous to those between functorially finite torsion classes and wide subcategories studied by Ingalls-Thomas and Marks-Stovicek.